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China

Some Observations on Cultural Factors Affecting
Scientific Progress

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1. Q. What is your own opinion as to why China seemed to have lost its ideas of progress following the period of the contending states?

A. My answer is based on two assumptions concerning this question: first, that "ideas of progress" is intended here to mean an attitude of looking forward to the future as opposed to looking backward to the past and, second, that the progress which is implied as an attribute of the period of the contending states consists in the breakdown of feudal authority and the release of individualistic and creative energy. It seems to me that what happened was essentially this - a conservative political philosophy, i.e. Confucianism, developed in response to the breakdown of traditional authority and the need to restore political stability and social morality. Confucianism became a national cult, as well as a doctrine in which officials had a vested interest, and it has exerted a backward-looking influence on Chinese society down to the present time. The Confucian philosophy was a post-mortem idealization of the feudal system which, in Confucian eyes, had gone through radical changes for the worse during the period of the contending states. Confucius looked back to the past when good government prevailed. He established an enduring code for Chinese leaders seeking to govern not by making dynamic adjustments to old and new problems, but by applying either by force or persuasion the idea of obedience to superiors and responsibility to inferiors. It would not only be over-simplified, but also erroneous, to say that every Chinese dynasty since the period of the contending states has pursued the same Confucian ideal. There have been many differences and many complex factors in the situation. But in my judgment the study of Chinese history reveals the constant repetition of a pattern of political behaviour which is based on the idealization of the past.

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2. Q. In addition to Confucianism, what elements of Taoism and Buddhism are pertinent to an understanding of this historical situation?

A. The essence of philosophical Taoism is the glorification of the era of primal simplicity. The Taoist Utopia is the period of remotest antiquity when man-made social differences did not exist. The basic outlook of Buddhism is other-worldly. Buddhism regards the present world as an illusion with no genuinely lasting qualities. Hence, whatever happens in the present world, including progress, is equally illusory. It is easy to see how these systems of thought have reinforced the anti-progress character of Confucianism throughout Chinese history. To all three of these systems - Confucianism, Taoism, and Buddhism - the idea of "progress," as we conceive it, has no meaning.

3. Q. What philosophical ideas or traditional cultural elements have tended to weaken Chinese interest in the systematic study of nature?

A. I recommend the following two articles which contain the best analyses of that question I have seen:

- "Why China Has No Science" by Feng Yu-liang, International Journal of Ethics, Volume 32, 1922
- "The Attitude Toward Science and Scientific Methods in Ancient China" by Dirk H. R. Bodde, T'ien Hsin (English Language) Volume II, 1936.

4. Q. What do you believe were the main factors contributing to Chinese failure to develop Western scientific attitudes after their introduction in the 17th and 19th centuries?

A. Feng Yu-liang's article, cited above, gives the best answer to this question that I know of.

5. Q. What cultural factors, including philosophical, remain today as deterrents to progress in science and technology?

A. The survival of a Confucian outlook may tend to discourage the Chinese from becoming really enthusiastic about scientific endeavour. The present regime on the mainland is undoubtedly making headway in eradicating this attitude, but it is unlikely that a completely modernized interest in science can be imposed on the population overnight. In certain scientific fields, for example archeology and anthropology, superstition has been a hindrance to scientific work. As late as 1930 the Chinese Government had to intervene against strong public opposition in order that certain archeologists could go about their work in China. The new regime is attacking the old superstitions as well as the old philosophical ideas and there is no question of any of the regime's scientific investigations being hampered by superstitious opposition. But popular superstitions are deeply ingrained features of pre-scientific and pre-industrial cultures and as long as these beliefs persist, and to the degree that they persist, they will exert a negative force against the growth of a modern scientific environment in China.

6. Q. What cultural factors might account for the failure of Western-trained Chinese scientists to continue productive work after returning to China with a good record of achievement under Western guidance and inspiration?

A. The scientific milieu in which the Chinese scientist makes his record in the West has never existed in China. This is a cultural factor in the broadest sense and an analysis of it would include economic factors as well as the cultural, historical, and philosophical influences mentioned before. The failure of a gifted Western-trained Chinese scientist to accomplish anything in his field after returning to China is a personal tragedy which has happened

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to many of my friends and acquaintances. I will give several typical examples of what usually happens and why it happens.

(a) The scientist returns to China and is unable to find a position calling for the particular specialty in which he has been trained in the West. He must support his family and so he takes a job which does not allow the development of his abilities and which may not even be in the field of science. There are no private foundations to support him in the interests of a general advance of scientific knowledge. After a few years his knowledge becomes rusty and his interest weak. By that time he is usually so committed that he could not return to his original work even if a fair opportunity to do so occurred.

(b) The scientist returns to China and finds a suitable position but does not find the equipment and the stimulus provided by colleagues which made his achievements possible in the West. He finds it difficult if not impossible to advance his work and becomes a mediocre teacher or investigator.

(c) The scientist returns to China and finds a suitable position and the necessary equipment with which to carry on his work. But since his culture values other things far more highly than scientific achievement, he cannot rely on his work alone to assure him promotion or even the holding of his job. He is distracted by the necessity of playing politics in his organization and his work suffers. He may finally give up altogether and use most of his energy in an effort to increase his income and security, with his scientific work pushed to the background.

These three instances differ only in superficial respects. The basic problem faced by each of these hypothetical scientists is that of having to earn a living in a culture which has never been willing to support more than a handful of pure scientists for their work alone. It would be unthinkable for a wealthy Chinese to establish a Ford or a Guggenheim Foundation to support scientific research.

7. Q. How successful do you believe the Communist regime will be in creating the kind of environment which will encourage scientific progress?

A. I am afraid that the Chinese Communists will probably be able to transform the values of Chinese society in another generation and create a materialist-technical environment approaching that of the USSR. The Chinese Communists are using dictatorial methods to destroy the cultural and philosophical patterns which have inhibited the growth of a scientific milieu. They are training and assigning scientists and technicians by fiat. They will, unless their power is broken by internal or external events, go to the opposite extreme and produce a dehumanized technology. Communist politics will play its part in this new environment just as personal politics did in the old, but China will have a significant portion of its human and material resources committed to scientific and technical work. It may take much more than another generation to root out all the old cultural influences from the mass population but under the present system the family influence over youth, as the channel for perpetuating cultural attitudes, will probably cease to be an important factor.

8. Q. With regard to the interference of Communist ideology with scientific conclusions, especially in the biological sciences, do you see any reason to expect that the Chinese would be any more resistant than the Soviets to such meddling?

A. No. I would expect both the Chinese Communist political leaders and the Chinese scientists (those, at least, who wish to keep their jobs) to go along with whatever ideological dictation in science, as in everything else, issues from the Kremlin.

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